From "Draft Report Inorganic Data Validation Report March 23/88

DATA SUMMARY FORM : INORGANICS

Case Number: 7602
Site Name: Witco Chemical
Date of Sampling: 7/14 - 7/15/87

WATER SAMPLES (ug/L)

+Due to dilution, sample quantition limit is aff
See dilution table for specifics.

SEE GLOSSARY FOR CODE DEFINITIONS

CRUL*	Sample No. / Location / ANALYTE	MCK-648 Bear Creek upstream		MCK-649 Bear Creek Downstream		MCK-650 well OW-1		MCK-651 well L-1		MCK 652 well L-4		MCJ-251 well OW-3		MCJ-252 well 955		MCJ-260 Trip/Field Blank		MCJ-261 Equip. Blank		MCJ-2 well 9 Dup.	
200	Aluminum	122		234		11100		2090		19300		883		936		[145]				1760	
60	Antimony																				
10	*ARSENIC		UL	[1.4]	L	*67	L	[8.0]	L	13	L	13	L	[2.7]	L		UL		UL	[3.8]	
200	Barium	[133]	K	[171]	K	[46]	K	[102]	K	397	K	468	K	1280	K	[23]	K	[20]	K	1100	
5	Beryllium					11				[2.0]											
5	*CADMIUM					[5.0]				*22											
5000	Calcium	46600		44000		158000		61000		77200		362000		36500						45400	
10	*CHROMIUM	[1.4]		[2.0]		[4.8]		[2.6]		44		[2.3]		[1.6]				[0.97]		[4.3]	
50	Cobalt					84				[37]		203								[9.0]	
25	Copper									[22]											
100	Iron	990	J	880	J	69300	J	48400	J	179000	J	34300	J	16500	J	123	J		UJ	29600	
5	*LEAD		UL		UL	*34	L	11.	L	*54	L		UL	7.8	L		UL		UL	6.6	
5000	Magnesium	11600		9720		42300		15700		25200		105000		12700						14700	
15	Manganese	1020		884		4710		9560		10600		39600		1840						3230	
0.2	Mercury																				
40	*NICKEL					226		[34]		125		98		[28]						[28]	
5000	Potassium	[2650]		[3880]		11500		5110		9390		43400		[4480]		[78]		[72]		[4460]	
5	Selenium		R		R		R		R		R		R		R		R		R		
10	Silver		R		R		R		R	18	L		R		R		R		R		
5000	Sodium	79600		245000		103000		66900		11400		1520000		75100		[313]		[346]		77400	
10	Thallium		UL		UL		UL		UL		UL		UL		UL		UL		UL		
40	Tin		UL		UL		UL		UL		UL	40	L		UL		UL		UL		
50	Vanadium									[18]											
20	Zinc					332		52		125		89		[9.0]						23	
10	Cyanide	NR		NR		NR		NR		NR		NR		NR		NR		NR		NR	

DATA SUMMARY FORM : INORGANICS

Case Number: 7602

Site Name: Witco Chemical - Petrolia

Date of Sampling: 7/15/87

WATER SAMPLES (ug/L)

*Due to dilution, sample quantition limit is affec
See dilution table for specifics.

SEE GLOSSARY FOR CODE DEFINITIONS

CRDL*	Sample No. / Location / ANALYTE	MCJ-265 Matrix spike-Well	
200	Aluminum	1670	
60	Antimony		
10	*ARSENIC	[4.8]	L
200	Barium	1130	K
5	Beryllium		
5	*CADMIUM		
5000	Calcium	45800	
10	*CHROMIUM	[3.1]	
50	Cobalt	[12]	
25	Copper		
100	Iron	27500	J
5	*LEAD	7.0	L
5000	Magnesium	15000	
15	Manganese	3020	
0.2	Mercury		
40	*NICKEL	[22]	
5000	Potassium	[4350]	
5	Selenium		R
10	Silver		R
5000	Sodium	79000	
10	Thallium		UL
40	Tin		UL
50	Vanadium		
	Zinc	[15]	
	[illegible]	NR	

Case Number: 7602 DATA SUMMARY FORM : I N O R G A N I C S Page 1 of

Site Name: Witco Chemical - Petrolia

Date of Sampling: 7/14 - 7/15/87

SOIL SAMPLES (mg/Kg)

+Due to dilution, sample quantition limit is aff
, See dilution table for specifics.

SEE GLOSSARY FOR CODE DEFINITIONS

CRDL	Sample No. / % Solids / Location / ANALYTE	MCK-646 42.2 Bear Creek upstream		MCK-647 69.2 Bear Creek Downstream		MCJ-262 49.4 Sediment Dup. Down		MCJ-263 49.4 Sediment Matrix Spike	
40	Aluminum	9210		2920		7480		6010	
12	Antimony		R		R		R		R
2	Arsenic	14		9.4		20		13	
40	Barium	2830		270		1330		544	
1	Beryllium	[2.3]							
1	Cadmium								
1000	Calcium	[3440]		11300		10400		14700	
2	Chromium	17		18		14		21	
10	Cobalt	[23]		[11]		[14]		[16]	
5	Copper								
20	Iron	38500		15500		26300		24600	
1	*LEAD	33		38		33		46	
1000	Magnesium	[1950]	L	[759]	L	[1700]	L	[1400]	L
3	Manganese	623		461		457		398	
0.2	Mercury					0.3			
8	Nickel	59		[21]		41		[38]	
1000	Potassium	[1110]		[518]		[1220]		[1010]	
1	Selenium		R		R		R		R
2	Silver								
1000	Sodium	[338]		[340]		[479]		[474]	
2	Thallium								
8	Tin								
10	Vanadium								
4	Zinc	133		38		110		80	
2	Cyanide	NR		NR		NR		NR	

NUS CORPORATION
PEC DIVISION

Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

23042.

C-34-8-4-460

August 30, 1984

Project No. 6131.28

Mr. Anthony Talak, Jr.
Regional Solid Waste Engineer
Bureau of Solid Waste Management
Pennsylvania Department of Environmental Resources
1012 Water Street
Meadville, Pennsylvania 16335

Subject: Witco Chemical Corporation
Petrolia, Pennsylvania Plant

Dear Mr. Talak:

Six (6) copies of the analytical results for the Third Quarter of 1984 are enclosed. These are for Witco Chemical Corporation's plant in Petrolia, Pennsylvania.

Also, attached is a table showing the water elevations of the monitoring wells at this location. These elevations were taken in July.

Please call us if you need further information.

Very truly yours,

Daniel Threlfall
Assistant General Manager

DT:bjs
Attachment
Enclosures

cc: Mr. L. Buckley

WITCO CHEMICAL CORPORATION
PETROLIA, PENNSYLVANIA
WATER ELEVATIONS

WELL	DATE	ELEVATION (FEET)
L1	7/10/84	1205.3
L2	7/10/84	1179.3
L3	7/10/84	1177.7
L4	7/10/84	1176.2
OW1	7/11/84	1336.92
OW2	7/11/84	1327.10
OW3	7/11/84	1331.23
OW4	7/11/84	1332.05
951	7/10/84	1182.1
952	7/10/84	1173.9
953	7/10/84	1173.8
954	7/10/84	1175.7

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

REPORT DATE: 07/31/84

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070520

DATE RECEIVED: 07/12/84

07/11

SAMPLE IDENTIFICATION: #OW-2

TEST	DETERMINATION	RESULTS	UNITS
M190	Iron,total (Fe)	2.28	mg/l
M240	Manganese (Mn)	3.55	mg/l
M310	Sodium (Na)	86	mg/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, organic (C)	40.7	mg/l
W315	Halogens, Total Organic (TOX)	12	ug/l
M490	pH	7.1	
W700	Specific Conductance,25C (KCl)	5000	umhos/cm
W130	Chloride (Cl)	1800	mg/l
W730	Sulfate, turbidimetric (SO4)	470	mg/l

COMMENTS:

Reviewed and Approved by: PM

. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070521

REPORT DATE: 07/31/84

DATE RECEIVED: 07/12/84

SAMPLE IDENTIFICATION: #OW-3

07/11

TEST	DETERMINATION	RESULTS	UNITS
M190	Iron, total (Fe)	36.1	mg/l
M240	Manganese (Mn)	40	mg/l
M310	Sodium (Na)	2000	mg/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, organic (C)	444	mg/l
W315	Halogens, Total Organic (TOX)	91	ug/l
W490	pH	6.2	
W700	Specific Conductance, 25C (KCl)	7900	umhos/cm
W130	Chloride (Cl)	3000	mg/l
W730	Sulfate, turbidimetric (SO4)	450	mg/l

COMMENTS:

Reviewed and Approved by: PM

J. THRELFALL

CLIENT

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

REPORT DATE: 07/31/84

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070522

DATE RECEIVED: 07/12/84

07/11

SAMPLE IDENTIFICATION: #OW-4

TEST	DETERMINATION	RESULTS	UNITS
M190	Iron,total (Fe)	0.02	mg/l
M240	Manganese (Mn)	0.06	mg/l
M310	Sodium (Na)	3	mg/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, organic (C)	44.6	mg/l
W315	Halogens, Total Organic (TOX)	19	ug/l
M490	pH	7.8	
W700	Specific Conductance,25C (KCl)	940	umhos/cm
W130	Chloride (Cl)	< 2	mg/l
W730	Sulfate, turbidimetric (SO4)	240	mg/l

COMMENTS:

Reviewed and Approved by: PM

D. THRELFALL

D. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275
412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

REPORT DATE: 07/31/84

NUS PROJECT NO: 613128
NUS CLIENT NO: 28030S
NUS SAMPLE NO: 14070523

DATE RECEIVED: 07/12/84

07/10

SAMPLE IDENTIFICATION: MONITORING WELL L-1

TEST	DETERMINATION	RESULTS	UNITS
N190	Iron, total (Fe)	29.3	mg/l
N435	Iron, total (Fe)X2)	29.5	mg/l
N436	Iron, total (Fe)X3)	29.5	mg/l
N437	Iron, total (Fe)X4)	29.3	mg/l
N100	Carbon, organic (C)	49.2	mg/l
W101	Carbon, organic (C)2	45.3	mg/l
N102	Carbon, organic (C)3	46.5	mg/l
W103	Carbon, organic (C)4	44.1	mg/l
N120	COD (O2)	84	mg/l
W130	Chloride (Cl)	63	mg/l
N490	pH	6.5	
W491	pH (2)	6.6	
N492	pH (3)	6.7	
W493	pH (4)	6.7	
N700	Specific Conductance,25C (KCl)	770	umhos/cm
W701	Specific Conductance @ 25 C(2)	790	umhos/cm
N702	Specific Conductance @25 C(3)	790	umhos/cm
W703	Specific Conductance @ 25 C(4)	790	umhos/cm
N730	Sulfate, turbidimetric (SO4)	160	mg/l
W989	COD (O2) (2)	85	mg/l
N990	COD (O2) (3)	84	mg/l
W991	COD (O2) (4)	89	mg/l
N992	Sulfate, turbidimetric (SO4)-2	150	mg/l
W993	Sulfate, turbidimetric (SO4)-3	150	mg/l
N994	Sulfate, turbidimetric (SO4)-4	150	mg/l
W995	Chloride (Cl) (2)	61	mg/l
N996	Chloride (Cl) (3)	62	mg/l
W997	Chloride (Cl) (4)	62	mg/l

COMMENTS:

Reviewed and Approved by: JMC

D. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

REPORT DATE: 07/31/84

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070524

DATE RECEIVED: 07/12/84

SAMPLE IDENTIFICATION: MONITORING WELL L-2

07/10

TEST	DETERMINATION	RESULTS	UNITS
I190	Iron,total (Fe)	120	mg/l
W100	Carbon, organic (C)	216	mg/l
I120	COD (O2)	550	mg/l
W130	Chloride (Cl)	230	mg/l
I490	pH	6.0	
W700	Specific Conductance,25C (KCl)	1500	umhos/cm
I730	Sulfate, turbidimetric (SO4)	1400	mg/l

COMMENTS:

Reviewed and Approved by: JHC

J. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

REPORT DATE: 07/31/84

ATTENTION: MR. L. G. BUCKLEY

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070525

DATE RECEIVED: 07/12/84

SAMPLE IDENTIFICATION: MONITORING WELL L-3

07/10

TEST	DETERMINATION	RESULTS	UNITS
N190	Iron,total (Fe)	350	ug/l
W100	Carbon, organic (C)	269	mg/l
N120	COD (O2)	860	mg/l
W130	Chloride (Cl)	290	mg/l
N490	pH	3.8	
W700	Specific Conductance,25C (KCl)	3100	umhos/cm
N730	Sulfate, turbidimetric (SO4)	2000	mg/l

COMMENTS:

Reviewed and Approved by: JHC

D. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

REPORT DATE: 07/31/84

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070526

DATE RECEIVED: 07/12/84

07/10

SAMPLE IDENTIFICATION: MONITORING WELL L-4

TEST	DETERMINATION	RESULTS	UNITS
8190	Iron,total (Fe)	480	mg/l
W100	Carbon, organic (C)	204	mg/l
8120	COD (O2)	700	mg/l
W130	Chloride (Cl)	210	mg/l
8490	pH	3.9	
W700	Specific Conductance,25C (KCl)	2700	umhos/cm
8730	Sulfate, turbidimetric (SO4)	1500	mg/l

COMMENTS:

Reviewed and Approved by: JHC

L. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070527

REPORT DATE: 07/31/84

DATE RECEIVED: 07/12/84

SAMPLE IDENTIFICATION: MW #951

07/10

TEST	DETERMINATION	RESULTS	UNITS
#190	Iron,total (Fe)	0.68	mg/l
M240	Manganese (Mn)	3.72	mg/l
M310	Sodium (Na)	179	mg/l
W100	Carbon, organic (C)	46.4	mg/l
#101	Carbon, organic (C)2	45.7	mg/l
W102	Carbon, organic (C)3	44.6	mg/l
#103	Carbon, organic (C)4	43.2	mg/l
W130	Chloride (Cl)	< 2	mg/l
#315	Halogens, Total Organic (TOX)	21	ug/l
W316	Halogens, Total Organic (TOX)2	14	ug/l
#317	Halogens, Total Organic (TOX)3	19	ug/l
W318	Halogens, Total Organic (TOX)4	< 10	ug/l
#490	pH	7.6	
W491	pH (2)	7.3	
#492	pH (3)	7.4	
W493	pH (4)	7.4	
#700	Specific Conductance,25C (KCl)	940	umhos/cm
W701	Specific Conductance @ 25 C(2)	960	umhos/cm
#702	Specific Conductance @25 C(3)	960	umhos/cm
W703	Specific Conductance @ 25 C(4)	950	umhos/cm
#730	Sulfate, turbidimetric (SO4)	59	mg/l

COMMENTS:

Reviewed and Approved by: PM

J. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 152

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

REPORT DATE: 07/31/84

ATTENTION: MR. L. G. BUCKLEY

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070528

DATE RECEIVED: 07/12/84

07/10

SAMPLE IDENTIFICATION: MW #952

TEST	DETERMINATION	RESULTS	UNITS
M190	Iron, total (Fe)	6.19	mg/l
M240	Manganese (Mn)	0.73	mg/l
M310	Sodium (Na)	48	mg/l
M100	Carbon, organic (C)	29.6	mg/l
M130	Chloride (Cl)	< 2.0	mg/l
M315	Halogens, Total Organic (TOX)	< 10	ug/l
M490	pH	7.5	
M700	Specific Conductance, 25C (KCl)	540	umhos/cm
M730	Sulfate, turbidimetric (SO4)	75	mg/l

COMMENTS:

Reviewed and Approved by: PM

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

412-788-1080

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070529

REPORT DATE: 07/31/84

ATTENTION: MR. L. G. BUCKLEY

DATE RECEIVED: 07/12/84

07/10

SAMPLE IDENTIFICATION: MW #953

TEST	DETERMINATION	RESULTS	UNITS
M190	Iron,total (Fe)	6.49	mg/l
M240	Manganese (Mn)	1.05	mg/l
M310	Sodium (Na)	158	mg/l
W100	Carbon, organic (C)	46.3	mg/l
M130	Chloride (Cl)	< 2	mg/l
W315	Halogens, Total Organic (TOX)	18	ug/l
M490	pH	7.3	
W700	Specific Conductance,25C (KCl)	840	umhos/cm
M730	Sulfate, turbidimetric (SO4)	160	mg/l

COMMENTS:

Reviewed and Approved by: PM

J. THRELFALL

NUS CORPORATION

Laboratory Services Division
5350 Campbells Run Road
Pittsburgh, PA 15205
412-788-1080

REMIT TO:
Park West Two
Cliff Mine Road
Pittsburgh, PA 15275

LAB ANALYSIS REPORT

CLIENT NAME: WITCO CHEMICAL CORPORATION
ADDRESS: SONNEBORN DIVISION - HWY 268
PETROLIA, PA 16050

ATTENTION: MR. L. G. BUCKLEY

NUS PROJECT NO: 613128
NUS CLIENT NO: 280305
NUS SAMPLE NO: 14070530

REPORT DATE: 07/31/84

DATE RECEIVED: 07/12/84

SAMPLE IDENTIFICATION: MW #934

07/10

TEST	DETERMINATION	RESULTS	UNITS
M190	Iron, total (Fe)	0.26	mg/l
M240	Manganese (Mn)	0.92	mg/l
M310	Sodium (Na)	1800	mg/l
W100	Carbon, organic (C)	438	mg/l
M130	Chloride (Cl)	< 2	mg/l
W315	Halogens, Total Organic (TOX)	47	ug/l
M490	pH	8.3	
W700	Specific Conductance, 25C (KCl)	5400	umhos/cm
M730	Sulfate, turbidimetric (SO4)	250	mg/l

COMMENTS:

Reviewed and Approved by: PM

D. THRELFALL

10:30 AM.

Phone Conference Call Mon. July 19/99

Mark Ansil Hydro.

SIGMA guy. ⇒ handles units past 1980

Anita

Paul, Marcos.

* point of compliance issue, need to adequately characterize g.w. contamination FIRST before choosing a point of compliance.

- ~~We~~ PASEP will send a draft comment letter via e-mail on the closure strategy letter from WITCO (dated March 15, 1999) for our review & approval/comment...

when?

j' SWMU's closed under a PADEP Consent Order or an approved closure plan ⇒

Conference Call - WITCO Monday Aug. 16/99 1 pm.

ISSUES they want to discuss:

- monitoring well placement + point of compliance issues.
- WITCO wants to explain how they want to peisue sampling in AOC 12 + AOC16.
(AOC 12 is located beneath several large tanks that are currently in use) ⇒ used to be a lagoon area ~~(AOC 12)~~ of unknown size, 1935-1695, took liquid + solid wastes, (wax spill clean-ups, lab wastes, tank cleanings, drums of waxes + heavy oils, tires, rubble + fly ash). During closure, liquids were removed + transported to SWMU 11 (impoundment #5) + the area was backfilled with soil + ash. ECP will provide oversight for this clean up area ➔

(AOC 16 is located under a heavy process area (east of the Creek) ⇒ under the present sulfonate plant. Contains chromium containing fill material.

- DEP comment #5 re: coke disposal area? what are WITCO's plans?

- Dep noted that the site specific standard may be the only option under ACT 2 that is available to the AOC's where waste will remain in place. (why? is this the ess would require a risk assessment?)

(northern part of AOC 17)
-7)
• 7 RCRA units closed by State, 3 trenches associated w/ AOC 17.
= AOC/Areas 8-16, AOC 17 (minus 3 trenches), AOC 18, + Areas 5+15

RFA - A, M, S
87

For AOC's 1, 2+8, were closed under consent ~~state~~ order with the PADEP (waste was removed).
Witco will evaluate whether sufficient data exist to document attainment of the ACT 2 SWHS for soil, if not, will take more soil samples

AOC 3-7, not looking at ⇒ closed by state (OK w/ state).

- State has authority, or the "power" to work on RCRA units. supposedly 8 of these units were closed thru consent orders or closure plans etc. If closure requires gw monitoring - the state would still be responsible for that area as well? ~~IE~~ 1 of the areas closed (by the state) has "supposed" gw contamination below ... is will the state look after that? ~~it the state's problem or ours~~? (even though the Facility intends on doing ~~the~~ a site wide gw thing)

- are we worried about units that were closed with the State?

WITCO CONFERENCE CALL MONDAY, AUGUST 16th, 1 PM

- 3 trenches (N) in AOC 17 (or AOC17a) under WM oversight

Comments:

1. AOC's 1-7 closed out under PADEP, will not look for release if EPA + DEP say O.K. it's all closed out. ~~WITCO~~ is needing more documentation to show adequate closure of these areas. Would satisfy EPA's

2. AOC17 sampling shows waste is non-hazardous from TCLP analysis.

3. looking to group together units, to look at groundwater, OK with EPA if the situation allows it. State says no problem, but they want to know which units would be included + be able to approve/disapprove that.

4. Perimeter soil borings -, do the best they can

5. [AOC #9] ⇒ was part of coke disposal area?

6. Witco is shootin' for SWMS

7. q → AOC's post 1980 would require deed notice for waste left in place, however AOC17 is non-hazardous

ENVIRONMENTAL STRATEGIES CORPORATION
Four Penn Center West • Suite 315 • Pittsburgh, Pennsylvania 15276 • (412) 787-5100 • Fax (412) 787-8065

March 27, 2000

Anita M. Stainbrook
Pennsylvania Department of Environmental Protection
230 Chestnut Street
Meadville, PA 16335-3481

Re: Remedial Investigation Work Plan
CK Witco Corporation
Petrolia, Butler County, Pennsylvania

Dear Anita:

This correspondence is in response to your letter of January 3, 2000, which includes comments from the Pennsylvania Department of Environmental Protection (PADEP) and United States Environmental Protection Agency Region III (USEPA) on the Remedial Investigation Work Plan (Work Plan), dated October 21, 1999. As discussed on March 14, 2000, Environmental Strategies Corporation (ESC) has reviewed the PADEP and USEPA comments and will make appropriate modifications to the Work Plan procedures before implementation; however, a revised Work Plan will not be submitted.

ESC intends to complete the RI in a phased approach with periodic communications (i.e., meetings and conference calls) with PADEP and USEPA at milestones during the RI. We anticipate that the next meeting with PADEP and USEPA will be at the conclusion of the RI soil investigation activities.

As required by USEPA in its Comment No. 3 (provided below), the remainder of this letter includes ESC's responses to the USEPA Quality Assurance/Quality Control (QA/QC) comments. In addition, we have provided PADEP and USEPA with the requested Remedial Investigation (RI) Project Quality Objectives (PQOs) within the enclosed document. These PQOs include:

- Project Management
- Quality Objectives and Criteria for Measurement Data
- Data Management
- Field Audits and Corrective Action
- Data Validation

USEPA QA/QC Comments and ESC Responses

USEPA Comment No. 3

The "Remedial Investigation Work Plan" was reviewed by a member of the Region III Quality Assurance (QA) Team for compliance with EPA quality assurance and quality control requirements. Comments generated by this review are enclosed. The quality assurance portion of this project is a vital key to the future success of the project. Therefore, it is crucial that any concerns or issues at this point regarding quality assurance and quality control are clarified and addressed up front for the benefit of all parties involved. For this reason, EPA must require Witco to address the enclosed comments, and submit a response to these comments for EPA and Pennsylvania DEP approval before proceeding under the proposed workplan.

Response to USEPA Comment No. 3

ESC has provided a response to each of the QA Team's comments within this letter. Reference is made in several responses to the enclosed PQOs document. This document provides a detailed response to the QA Team's comments.

USEPA Comment No. 4

Soil detection limits must be below Risk Based Concentration (RBC) residential standards.

Response to USEPA Comment No. 4

ESC has compared the RBCs to the soil detection limits for each of the potential COIs. The COI detection limits fall below the RBC screening criteria. Table 1 of the PQOs provides a summary of the COI practical quantitation limits for each potential COI and the respective RBC screening criteria.

USEPA REGION III QUALITY ASSURANCE TEAM COMMENTS

PROJECT MANAGEMENT

USEPA Comment on Project Organization

- This document should identify the key person(s) responsible for overall project QA/QC; sampling operations and sampling QC; laboratory QC; data processing; data review and oversight and systems audits of field and laboratory operations.
- An organizational chart which provides line authority for project personnel and subcontractors should also be included.
- The laboratory that will perform the analyses for this project must complete the enclosed Laboratory Qualifications Template.

Response to Comment on Project Organization

The project organizational structure including the responsibilities of key project personnel is provided in Section 1 of the enclosed PQOs. Figure 1 (Project Organization) has also been added to the PQOs. In addition, this section includes the required QA/QC information for the analytical laboratory that will be used during the RI.

USEPA Comment on Quality Objectives and Criteria for Measurement Data

- For each parameter, QA objectives for precision, accuracy and completeness should be quantitatively stated. These objectives must be based on project requirements, rather than technical capabilities.
- This document should also include the method detection limits (MDL) and/or practical quantitation limits required for this project.

Response to Comment on Quality Objectives and Criteria for Measurement Data

The quality objectives and criteria for measurement data are provided in Section 2 of the enclosed PQOs. The QA objectives for precision and accuracy are summarized for each parameter in Table 1. The Practical Quantitation Limits (PQLs) for each potential COI are provided in Table 2. The QA objective for completeness is 90 percent.

MEASUREMENT/DATA ACQUISITION

USEPA Comment on Sample Methods Requirements

- The EnCore® sampler has not been thoroughly evaluated by EPA as a sample storage device. Therefore, it is recommended that samples collected in this device be transferred to the soil sample vials as soon as possible or analyzed within 48 hours. (Section 3.1.3)
- Soil samples that contain carbonate materials may effervesce upon contact with the acidic preservation solution in the low concentration sample vial. If samples are known or suspected to contain high levels of carbonates, a test sample should be collected and checked for effervescence. (Section 3.1)
- If groundwater samples are not being collected using a low-flow pump, samples must be collected for dissolved and total metals. (Section 3.3)
- If pre-preserved sample containers are being used, the document must state how the contractor will ensure the preservatives are not being removed during surface water sampling. According to this document, "the sampler will place the container into the flowing water".
- This document should list the holding times, containers and preservation requirements for each parameter to be analyzed.
- If sampling equipment is being used to collect organic and inorganic samples, the nitric acid rinse should occur before the hexane rinse. Ultra-pure nitric acid and pesticide-grade hexane should be used. (Section 3.6)

Response to Comment on Sample Methods Requirements

The RI sampling and analysis procedures will be modified to address the sampling method issues raised by the USEPA. Soil samples collected for VOC analysis will be preserved by the laboratory in methanol. As shown in Table 2 of the PQOs, the medium soil PQLs are below the applicable soil screening criteria for each VOC, except chloromethane, 1,2-dibromo-3-chloropropane, and vinyl chloride. The laboratory will report these three VOCs to the method detection limit. Also, please note that these VOCs are not expected to be found at the facility. In addition, ESC has provided a list of holding times, sample containers, and preservation requirements for each parameter to be analyzed in Table 3-1 (enclosed) revised from the draft Work Plan. Lastly, the surface water sampling procedure will be modified to address the concerns associated with the potential loss of preservative during sample collection.

USEPA Comment on Analytical Methods Requirement

- This document should include analytical method numbers for all the parameters to be analyzed for this project. Field parameters should also be included.
- This document should also include the analytical method numbers for sample extraction and digestion.

Response to Comment on Analytical Methods Requirement

ESC has modified Table 3-1 (enclosed) of the draft Work Plan to include a list of the analytical method numbers for all analytical and field parameters. In addition, the list includes the analytical method number for sample extraction and digestion procedures.

USEPA Comment on Quality Control Requirements

- The recommended frequency for the collection of rinsate blanks is one per twenty samples per matrix or one per day, whichever is more frequent. (Section 3.1.3)
- The recommended frequency for the collection of matrix spike/matrix spike duplicate samples is one per twenty samples. (Section 3.1.3)
- It is recommended that a field blank be collected during groundwater sampling. The field blank is prepared by taking a container of analyte-free water to the field. In the field, the water is transferred to a sample container. The field blank should be preserved in the same manner as the samples. (Section 3.3.2)
- It is further recommended that a temperature blank be placed in each sample shipping container. The laboratory will use this container of blank water to measure the temperature within the shipping container.
- For groundwater sampling, the contractor must ensure that sufficient sample volume is collected to allow the laboratory to perform the MS/MSD analysis for volatiles, semivolatiles and metals. (Section 3.3.2)

Response to Comment on Quality Control Requirements

The RI sampling and analysis procedures will be modified to address the sampling quality control issues raised by USEPA.

USEPA Comment on Instrument Calibration

- It is recommended that a calibration verification check be performed for the PID after every 12 hours of continuous use. (Section 3.1.1)

- All field equipment must be calibrated daily. For pH and conductivity, it is further recommended that a calibration verification check standard be analyzed after every ten readings. The contractor must document the initial calibration results and the calibration verification check standard results. (Section 3.4)

Response to Comment on Instrument Calibration

The RI sampling and analysis procedures will be modified to address the instrument calibration issues raised by the USEPA.

USEPA Comment on Data Management

- This document should include data reduction procedures (i.e., types of records maintained, final storage and security of data files, procedures for eliminating transcription errors, etc.) The report scheme from collection of raw data through document storage should be described.

Response to Comment on Data Management

Data reduction and reporting requirements have been provided in Section 3 (Data Management) of the enclosed PQOs.

ASSESSMENT/OVERSIGHT

USEPA Comment on Assessments and Response Actions

- This document should include information about field corrective action procedures. These procedures should not only identify defects and track defects to the source, but also, document the results of the process. The contractor must also identify the person(s) responsible for initiating and approving corrective action.
- This document should address field audits (i.e., who will conduct the audit, what protocol will be used, what are the acceptance criteria).

Response to Comment on Assessments and Response Actions

Field audits and field corrective action procedures have been provided in Section 4 (Field Audits and Corrective Action) of the enclosed PQOs.

DATA VALIDATION

USEPA Comment on Data Review, Reduction, Validation and Verification Requirements

- All data from this project must be validated in accordance with M2 and IM1 level of review found in the Region III Innovative Approaches to Data Validation Guidance (6/95). A copy of this document has been enclosed with this review.

Response to Comment on Data Review, Reduction, Validation and Verification Requirements

Data validation procedures have been provided in Section 5 (Data Validation) of the enclosed PQOs.

Thank you for providing the above comments on the draft Work Plan. Please feel free to contact me at (412) 787-5100 with any remaining questions.

Sincerely yours,

Jeffrey A. Hassen, P.G.
Project Director

JAH:lmk

Enclosure

cc: Mr. Al Neshaiwat – (w/enclosure) CK Witco
Ms. Hilary Livingston – (w/enclosure) USEPA Region III
Mr. Mark Ansel – (w/enclosure) PADEP Meadville Regional Office
Mr. John Simon – (w/o enclosure) Environmental Strategies Corporation

Witco\136049\PQO\CoverLetter.doc

Pennsylvania Department of Environmental Protection

230 Chestnut Street
Meadville, PA 16335-3481

Northwest Regional Office

814-332-6648
Fax: 814-332-6121

January 3, 2000

Mr. Al Nesheiwat
Witco Corporation
1 American Lane
Greenwich, CT 06831-2559

Re: Preliminary Remedial Investigation Work Plan
Witco Corporation
Petrolia, Butler County

Dear Mr. Nesheiwat:

This correspondence is in response to the Remedial Investigation Work Plan, dated October 21, 1999, that was submitted on your behalf by Environmental Strategies Inc. General comments from both the U.S. EPA and the Pennsylvania DEP are included in this document. Additional comments provided by the EPA are included in the enclosure. Although several comments represent concerns raised by both governmental agencies, final approval of any aspect of the remediation process will be determined by the individual agency and will be based on the fulfillment of the appropriate regulations. It is expected that as data is collected, additional regulatory concerns will arise. Please be aware that both agencies are prepared to work with you in an attempt to avoid duplication of environmental efforts.

Comments are as follows:

PA DEP

1. Act 2 submittals need to function as "stand alone" documents. Older submittals to the Department and previous studies may be useful for providing supplemental data, but because they may not represent present site conditions, they are not acceptable to fulfill Act 2 requirements. Any finding presented in these older documents must be verified by new data gathered for the purpose of characterization or the demonstration of attainment for a chosen standard.

2. It may be premature at this time to limit the number and depth of proposed monitoring wells at any given Area of Concern (A.O.C.) or grouping of A.O.C.s as proposed on page 7. The number, location and construction specifics of the monitoring wells should be based on the potential effects of the identified contaminant of concern.

3. Under Act 2, MSC's apply to soil, not to waste(s). Any waste disposal area needs to be closed using best management practices for disposal facilities.

4. As stated on page 6, delineation activities will only be completed if source characterization contain Contaminants of Interest (COI's) above Act 2 standards or the USEPA RBC's. This approach may be applicable to soil materials but is inappropriate for wastes. Act 2 criteria are based on soil, and it would seem scientifically incorrect to apply them to wastes.

5. As stated on page 8, surface water and sediment will only be analyzed for those COI's which exceed the applicable Act 2 standard. No Act 2 standards exist for surface water, and it is inappropriate to apply either the groundwater or the soil to groundwater criteria to surface water or sediment. Chapter 16 standards would govern the surface water criteria. For those constituents for which there is no Chapter 16 criteria, the scenario, in Chapter 16 for establishing a standard would apply or, alternately perhaps some stream community evaluation could be used to demonstrate no adverse effects. (DEP)

6. The ecological evaluation proposed on page 9 does not include surface water.

7. Depending on the clean up standard chosen, the Act 2 framework may require public and municipal notification. Please be aware that because this facility is not in the formal Act 2 process, you should expect that additional comments from the public and local municipality may be incorporated into the review process. No part of this letter should be construed as a formal Departmental approval of the work necessary to fulfull the requirements of site characterization.

EPA General Comments

1. Does testing for the proposed analytes (SVOCs, VOCs, Act 2 metals) address all of the potential hazardous constituents of concern at the site? A table of the established contaminants of interest for the facility to date, the media type and applicable federal and state criteria should be included.

2. Do Areas of Concern identified for further investigation as part of this Work Plan also include any area where documented releases of hazardous wastes at the site have occurred to date? Have the compounds that were released from these previous incidents been included in the list of possible contaminants at the site? Characterization of contamination at the facility must include all areas where documented releases of hazardous wastes at the site have occurred.

3. The "Remedial Investigation Work Plan" was reviewed by a member of the Region 3 Quality Assurance Team for compliance with EPA quality assurance and quality control requirements. Comments generated by this review are enclosed. The quality assurance portion of the project is a vital key to the future success of the project. Therefore, it is crucial that any concerns or issues at this point regarding quality assurance and quality control are clarified and addressed up front, for the benefit of all parties involved. For this reason, EPA must require Witco to address the enclosed comments, and submit a response to these comments for EPA and Pennsylvania DEP approval before proceeding under the proposed workplan.

Soil Investigation:

4. Soil detection limits must be below Risk Based Concentration (RBC) residential standards.

Groundwater Investigation:

5. Once the soil investigation has been completed and the site hydrogeologic information has been collected and processed, Witco must submit a groundwater monitoring proposal to EPA and Pennsylvania DEP. This will give all parties involved the chance to agree on the placement of monitoring wells as well as the contaminants of concern for each of the areas. EPA and Pennsylvania DEP may require the facility to address additional issues and data gaps as the investigation process evolves to adequately define the extent of contamination at the site. It will prove easier for the facility to address these potential issues or data gaps midway in the investigation instead of at the end of the process. A preliminary groundwater conceptual model for the facility must be presented before location of additional wells can be agreed upon. This preliminary groundwater conceptual model must address the following points.

   a. All of the background groundwater laboratory data available for the facility must be compiled into a summary table detailing well number, contaminant hits, the aquifer in which the wells are screened, etc., to help in the development of a groundwater conceptual model for the facility, and to summarize onsite hydrogeological conditions.

   b. The effects of mines onsite and contaminant transport must be evaluated. There is a possibility that mines onsite could act as groundwater sinks and, as a result, they could affect groundwater flow.

   c. Production wells onsite or offsite which might affect the heads in the shallow, intermediate or deep aquifer and cause groundwater flow directions to be altered, or cause a downward gradient that would draw contamination into lower aquifers must be considered.

d. The claim that there is no hydrogeologic connection between the upper and intermediate/deep aquifers has not been adequately demonstrated. The "Intermediate and Deep Aquifer Investigation" that was performed by Chemviron, Inc. in 1987 reports benzene contamination (13ppb) at well I-5, while well D-5 found benzene at 8 ppb, and toluene at 5 ppb, which calls into question the theory that there is no hydrogeologic connection between the shallow and deeper aquifers. The current assessment of hydrogeologic connection between the aquifers must be clarified.

Thank you for the opportunity to provide preliminary comments to the Remedial Investigation Work Plan. Please feel free to contact either Hilary Livingston of the EPA or Mark Ansell from the DEP with any questions.

Sincerely,

Anita M. Stainbrook
Section Chief
Environmental Cleanup

cc: Mr. Mark Hassen (ESC)
Ms. Hilary Livingston (EPA)
Mr. Mark Ansell (DEP)

AMS:MWA:jb